

Students are asked their view of majors in survey from DUE

Survey originated from an EECS initiative to investigate causes of declining enrollment in Course 6-1

By Katherine Nazemi, Patrick Wahl, and Vivian Zhong
STAFF REPORTERS

A survey created to assess declining enrollment in Course 6-1 (Electrical Engineering) has been repurposed into an undergraduate-wide survey regarding students' perceptions of academic majors.

Dennis Freeman, dean for undergraduate education, and Institutional Research sent the survey in an email to undergraduates Oct. 31.

The survey was initially proposed by the Department of Electrical Engineering and Computer Science (EECS) as a means of evaluating Course 6-1, Jon Daries, Associate Director of Institutional Research, wrote in an email to the *The Tech*.

The EECS survey was developed by a committee co-chaired by Anantha Chandrakasan, the department head of EECS, and Asu Ozdaglar, MIT professor and incoming associate head of EECS.

"The number of students enrolling in 6-1 has been dropping," Chandrakasan said in an email to *The Tech*. In response, the committee was created with the aim of "revitalizing the undergraduate curriculum in EE."

The committee is heading a new effort to "create an exciting vision for the future of EE along with new class offerings" at both foundational and advanced levels. One of their goals is to "give a more integrative

experience for students," Chandrakasan said.

Course 6-1 currently has 78 majors enrolled; for comparison, Course 6-2 has 440 majors, and Course 6-3 has 667 majors.

The survey sought student input on the current curriculum and tried to elucidate student perceptions of EE.

While creating the survey, EECS and IR realized that questions directed only at EECS students "are not as useful without the context of what students in other majors think," Daries said. The survey questions were therefore generalized for the entire undergraduate student body.

The survey data will be used to "to aid departments as they evaluate their curricular offerings," Daries said.

The survey asks students why they chose their current major, prompting them to rate their agreement with a series of statements, including "I want to be financially well-off," "advice I received from parents," and "I want a rigorous curriculum."

The survey also asks students to write in the most valuable and the least valuable subject they have taken at MIT.

This new effort to assess student perceptions of EE and explore new course offerings is not a continuation of the recent course-wide restructuring. "Students generally seem happy with our changes and

Survey, Page 13



ARON RICARDO PEREZ-LOPEZ—THE TECH

MIT Concert Band promotes the Family Weekend Concert on Oct. 30 in the Student Center lobby under the direction of Thomas Reynolds and Collin Myers.

IN SHORT

UROP applications are due at 5 p.m. today for students applying for sponsored funding, volunteer, and for-credit UROPs.

Senior House turns 100 years old this year. Celebrate the centennial at the Senior House courtyard Saturday, Nov. 5 from 6 to 10 p.m.

Veteran's Day will be observed as an Institute holiday next Friday, Nov. 11.

Drop date is Wednesday Nov. 23. Students wishing to drop classes or change classes to Listener status after that date will face fees and a petition process. Drop date will also be the last day to petition for an Advanced Standing Exam.

Send news and tips to news@tech.mit.edu.

'Nightmare Machine' deep learning project combines horror, AI

Visitors to the website can help train a Media Lab algorithm that generates frightening images of faces and places

By Vivian Zhong
NEWS EDITOR

A team from the Media Lab recently debuted an artificial intelligence project called The Nightmare Machine in time for Halloween. The project involves training a deep learning algorithm to generate scary depictions of buildings and human visages.

Visitors to the project website, nightmare.mit.edu, can vote on the scariness of computer-generated "Haunted Places" and "Haunted Faces" to help train the algorithm to create optimally scary images.

The *Tech* reached out the team, which comprises post-doc Pinar Yanardag, research scientist Manuel Cebrian, and associate professor Iyad Rahwan, to learn more about the motivations and goals of the project.

The *Tech*: What motivated your team to come together for this project?

Manuel: Following the tradition of MIT hacks, we wanted to playfully commemorate humanity's fear of AI, which is a growing theme in popular culture. We found it appropriate to explore how machines themselves can generate the scary content. So we launched the Nightmare Machine, a website that showcases horror imagery created by cutting-edge Artificial Intelligence.

Pinar: We know that AI terrifies us in the abstract sense. Scholars

have long commented on the phenomenon of the uncanny valley, which describes how people feel a sense of eeriness and revulsion at robots that appear almost, but not exactly, like real human beings. But can AI elicit more powerful visceral reactions more akin to what we see in a horror movie? That is, can AI creatively imagine things that we find terrifying?

TT: How will you evaluate the efficiency of your machine learning algorithm and the capability of the AI?

Pinar: It's interesting to note that the generated faces are equally creepy from the AI's point of view, but people find some of them quite scary, while others not so much. So that reveals that there is extra information in how humans perceive horror that can be exploited to make even scarier faces [based on what] you suggest. Maybe in the future, we can generate "personalized" horror images were we tailor the generation process to the individual data.

TT: What's the next step after this project?

Manuel: For now, this is just a fun experiment, in the spirit of Halloween, to explore a new way which machines can scare us in the more visceral sense.

Iyad: Our research group's main goal is to understand the barriers between human and machine

AI, Page 13



DAMIAN BARABONKOV

The Pumpkin Drop, an event run by East Campus's First West, saw over 130 pumpkins dropped from the top of the Green Building as the audience watched from below.

FACETS OF BRAZIL

Learning about complexity. **CAMPUS LIFE**, p. 3

WHY HILLARY?

Mens et manus et president. **OPINION**, p. 5

DIVESTMENT

The debate drags on. **OPINION**, p. 4



PIRATES, MAIDENS, ADVENTURE

A ballet full of excitement. **ARTS**, p. 7

A FIRST FOR MIT ATHLETICS

Hear from the NCAA woman of the year. **SPORTS** p. 16

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A conversation with

Janet Mock

Tuesday, November 15, 5:30pm
Kirsch Auditorium (32-123)

Meet the author of *Redefining Realness*

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A MISTI SUMMER

The illusion of experience

A summer in São Paulo

By Wesley Woo

The first barbecue that Garrett — my roommate in Brazil and teammate on the MIT men’s soccer team — and I were invited to this summer was located in the Brazilian equivalent of the suburbs. We were working at Insper, a Brazilian business school, and had been invited by a couple of friendly Brazilian college students who shared our passion for soccer; we were gathering for the final of the European Championships in France, and Portugal, the nation of Garrett’s heritage, was facing off against the host nation. To get there required a 45-minute car ride that took us away from the skyscrapers of central São Paulo that we had grown accustomed to and into the nicest area we visited in Brazil. The house we visited, occupied by an Insper student and his family, was a multi-story, Spanish-style home complete with a swimming pool, entertainment room, and outdoor barbecue area.

The second barbecue that Garrett and I attended was located in Morumbi, a wealthy area situated next to the second biggest favela (slum) in São Paulo, Paraisópolis. The event was a reunion of sorts, as we had already finished our project at Insper and had moved to a different neighborhood of São Paulo. The home we visited here was not very similar to the other in physical appearance, but matched it in luxury. A penthouse in a multiple-building gated complex, this apartment had two stories and was beautifully furnished with plenty of modern ornaments and effects. The balcony on the second floor of the apartment had a surreal view overlooking the Morumbi neighborhood, as well as its own barbecue area and swimming pool.

At this second barbecue, something that the host’s mother said stuck with me for the entirety of our trip. “My sister moved to Florida because it’s really dan-

gerous here,” she had explained to us. “All of our cars have tinted and bulletproof windows, and we have to be extremely careful when we go out.”

This resonated with me because it contradicted everything I had come to learn about Brazil. Everywhere we had gone had been relatively safe. Getting around at night had been safe as long as we didn’t do anything that brought unwanted attention to ourselves. This testimonial was a sobering reminder that we had formed a one-sided view of São Paulo, despite having lived there for about a month and a half. Someone would later tell us that the main difference between Rio and São Paulo was that in São Paulo, it’s possible to never see the class disparity of the city because of the distinct separation between rich and poor neighborhoods.

In our defense, the reason we had formed this distorted view was not so much a result of willing ignorance as it was a byproduct of the nature of our purpose in Brazil. After all, for the first month, we had been working with engineering students from Insper College, who I realized were for the most part relatively well-off, and both of the apartments we rented were in wealthier areas.

At this second barbecue, something that the host’s mother said stuck with me for the entirety of our trip. “My sister moved to Florida because it’s really dangerous here.”

Working with Worldfund, a nongovernmental organization aimed at improving STEM education in Latin America, gave us the eye-opening opportunity to construct a more thorough perception of Brazil, especially when we visited Rio and saw the state of public schools. The work we

were doing with Worldfund consisted of first creating interdisciplinary, computer science based projects to help Brazilian STEM public school teachers teach more efficiently. We then went to a Worldfund workshop and helped trainers successfully teach these projects to public school teachers. In Rio, we saw schools taken over by students, and we heard from teachers that some had even taken to destroying school materials in protest of the broken public education system.

What I thought really made our trip different from others, though, was a night we went out with some twenty-somethings with whom we played futsal (a variation on soccer) every Saturday at Ibirapuera Park. We had met them the third or fourth week we were in Brazil and proceeded to play with them every Saturday morning at the park’s futsal court. By the end of our time in Brazil, we had grown quite close to them, and on our last Saturday night in Brazil, they decided they would be taking us out.

That night, we walked around side streets just off Avenida Paulista, and people were everywhere. The streets were packed to the point where cars had trouble pushing through the crowd, and loud

At the end of the night, we found ourselves at a park, equally crowded, at three in the morning. Despite all of this, I never felt unsafe or in danger. This, I remember thinking to myself, was an experience I would have missed if we had never explored or met anyone outside of work. As we walked around through the almost never-ending supply of intoxicated people, it struck me that this was a very rare experience for a tourist, let alone an MIT student, to have.

It was obvious this was not where the wealthy of São Paulo went on Saturday nights.

From all this, I gathered that the most important tool to have in the face of a completely foreign situation (like traveling to a new country) is an open mind. All of the friends we made in Brazil told us about new and different experiences they had in their country — watching their first Corinthians game, eating their first *pastel* (a Brazilian pastry), dealing with the impending impeachment of President Dilma. It was my job to constantly combine these stories with what I learned or observed on my own in order to accurately answer the question, “What did you think of Brazil?”

MISTI — MIT International Science and Technology Initiatives — is MIT’s pioneering international education program. Each year nearly 1,000 MIT undergrads and graduate students are matched with hands-on international projects through MISTI. To learn more about internship, teaching and research opportunities across the globe, check out misti.mit.edu.

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MIT Democrats for Hillary Clinton

The mens et manus presidential candidate

By Caroline Mak, Adam Hasz, Davi da Silva, and Elizabeth Han

For this country and for MIT, this election matters. Although none of the current presidential candidates went to MIT, one of them exemplifies both *mens et manus* — mind and hand. Like MIT students, Hillary is smart as hell. She's curious and intellectual, but also works hard to take the best ideas and put them into practice. She's not naturally a social butterfly; she can be awkward and uninspiring in large groups but is famously charming and witty in private. And yes, she's ambitious.

It's not just on style but also on substance that Clinton is better for MIT and the rest of the country than Trump. Consider the area of mental health, for instance, which is at the forefront of many MIT initiatives. Hillary Clinton has bold, specific plans for improving our nation's mental healthcare system, including providing federal support for suicide prevention and funding research in mental health. In contrast, Donald Trump has released zero specific plans for mental health and has publicly insinuated that veterans who suffer from PTSD are weak.

lists of the most LGBT-friendly colleges in the US. Clinton's extensive LGBT platform includes extending the protections of the Civil Rights Act to queer people and ending so-called "gay conversion therapy" that demonstrably causes extreme harm to LGBT youth. Hillary went beyond the hot button issues of protecting same-sex marriage and blocking discriminatory "bathroom bills" and fought for transgender people's rights to have government IDs properly reflect their gender. She is dedicated to the fight against HIV and AIDS, promising to not only protect research funding but also to cap medical costs for those living with HIV or AIDS today. Trump, however, chose a running mate who as Indiana governor signed a bill condoning anti-gay discrimination and who has actively advocated for conversion therapy.

Hillary Clinton's education platform includes major reforms to student loan debt and college tuition, so that all students, regardless of their background, can experience pulling all-nighters to finish their problem sets. In K-12, she advocates for more social and emotional support in schools to break down what has been dubbed the "school-to-prison pipeline"

Although none of the current presidential candidates went to MIT, one of them exemplifies both *mens et manus*.

About one third of MIT students are international, and many others have immigrant parents. Hillary Clinton's detailed immigration plan acknowledges and addresses the problems in our immigration system while treating immigrants with dignity and compassion. Trump, meanwhile, announced his candidacy by degrading Mexican immigrants, and he believes that American-born children of immigrants shouldn't necessarily be granted citizenship.

For years, MIT has been featured on

that disproportionately affects African Americans. She wants to provide every student in America with the opportunity to learn computer science and knows that in order to inspire the next generation of engineers and scientists, classrooms first need to have upgraded science labs and quality Internet access. Trump, on the other hand, has no coherent education policy, other than to repeat the words “school choice” and offer few real details. And as Hillary said in her acceptance speech at the Democratic National Convention, “It’s not just a

detail if it's your kid, if it's your family. It's a big deal."

The details of each candidate's platform don't get much media attention, but it's precisely policies like these that have the greatest impacts on our lives. Of course, Hillary isn't perfect. We view Clinton's establishment ties with concern; many of us supported Bernie Sanders in the primary, and yearn for a world with free college, universal healthcare, and real accountability for the financial industry.

We want her to set the tone for America, with dignity and compassion instead of rhetoric that reinforces hurtful prejudice and fear.

But just saying we want these things is not enough. We need Clinton in the White House to make these things possible, and then we need to keep urging her toward progressive change. Hillary has a proven track record of getting things done. Even today, as politics has become more polarized and Congress more gridlocked than ever, she's created real change through leadership — not empty bluster, but the act of reaching across the aisle and finding common ground. Through the creation of the Children's Health Insurance Program in the 1990s, she was able to reach common ground with Republicans to enact a policy that helps millions of children today. And in this election, she has received the endorsements of dozens of Republican officials and commentators that had supported only Republican presidential candidates for decades. While some conservatives may never be fans of Hillary, through mutual respect and listening to one another, the lives of many Americans can and will be improved in her presidency.

Which brings us to this: we want to vote

for and work with someone who is dedicated to furthering the progress of the past eight years, someone who has given her life to public service and continues making history. We want someone whose vision for America includes setting pollution standards and encouraging investment in clean energy, lifting millions out of extreme poverty, creating equal opportunity for college-bound students from all socioeconomic backgrounds, expanding the good achieved by the Affordable Care Act, and acting on the critical lack of adequate mental health care.

We want *her* to set the tone for America, with dignity and compassion instead of rhetoric that reinforces hurtful prejudice and fear. Although in her decades of public service, Clinton hasn't always landed on the right side of every issue, her career shows she has always progressed in the right direction. She has moved forward, not backward, and wants to make America even greater than it is now.

Although in her decades of public service, Clinton hasn't always landed on the right side of every issue, her career shows she has always progressed in the right direction.

Young people now make up 31 percent of the eligible voters in the United States. Our generation truly has the power to steer the country in a new direction. So let's elect Hillary Clinton, and push her to be the progressive we know she can be. We support Hillary Clinton for President. On November 8th, vote for *mens et manus*. Or, rather, *womens et womanus*.

Caroline Mak, Adam Hasz, Davi da Silva, and Elizabeth Han are members of the MIT Democrats.

GUEST COLUMN

Hope as a political engine

Electing a mindset

By Shenghao Wang

The American democratic experiment now finds itself at a crossroads. Our country is the most divided it's been in modern history. Fear and accusation dominate electoral rhetoric. In these trying times, we the people must rekindle the driving force behind America's success: hope.

It's forgivable to think that there is more of a reason than ever to fear. The rise of the so-called Islamic State, rising income inequality, and economic uncertainty understandably stoke fear. Hope, however, boasts an impressive résumé.

Barack Obama's presidency offers a recent example. Elected on a banner of "hope and change," he admittedly underdelivered on many campaign promises. Politics as usual reigns in Washington, Guantanamo Bay remains open, and comprehensive immigration reform remains but a dream. But he has certainly delivered: he brought American combat troops out of Iraq, stymied Iran's path to nuclear weapon without firing a single shot, and passed his signature Affordable Care Act ("Obamacare") to reform the American healthcare system. Given of the decades of presidents who tried and failed to reform the American healthcare system, Obamacare is certainly a testament to the power of hope to effect change

While Obama's message of hope and change disappointed the impossibly-high expectations it shouldered, that message nevertheless produced great progress. Our nation and world remain far from perfect, but hope continues to drive improvement.

Looking back further, the grueling but ultimately successful women's suffrage movement confirms the power of unrelenting hope. Voteless suffragists lobbied indefatigably for their right to vote for 80 years, from 1840 until the 1920 passage of the 19th amendment. To put that in perspective, the last 80 years have witnessed World War II,

the Cold War, the Apollo space missions, the formation of the UN and EU, the September 11 attacks, and America's first black president. That's a long time to battle for your rights.

After the triumphant conclusion of the campaign, the renowned suffragist activist Carrie Chapman Catt reflected, "How much of time and patience, how much work, energy and aspiration, how much faith, how much hope, how much despair went into it." Hope deferred may ferment into despair, but even then it drives American progress.

In fact, America owes its very existence to the power of hope. In 1763, the British Empire had just cemented itself as the world's dominant military power by winning the Seven Years' War. The fiery patriot Patrick Henry conceded that "they tell us, sir, that we are weak; unable to cope with so formidable an adversary" but concluded with the ultimatum, "give me liberty or give me death!"

Like all the other founding fathers, Henry staked his very life on the hope of establishing a more just society. Hope has always been at the core of American progress. While the holders of that hope were flawed – the founding fathers conspicuously ignored the rights of women in the Declaration of Independence, Catt's arguments for women's suffrage sometimes appealed to notions of white supremacy, and Obama's record can be judged by the reader – the hope they harbored produced historic milestones of American progress.

Hope may produce temporary disappointment, but it was and is and will continue to be our most powerful engine for progress. We must cherish the hope that we have inherited and jealously guard it as we navigate new frontiers of technology and uncertainty.

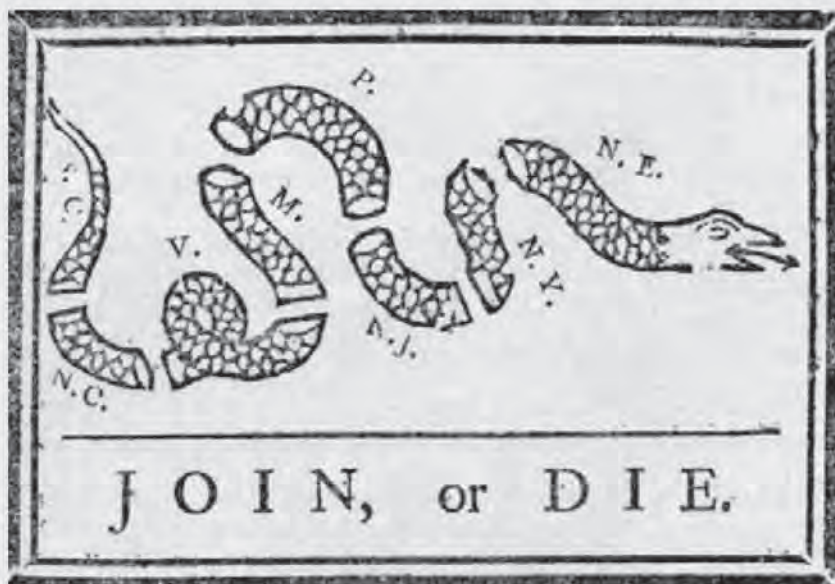
We must not allow the mendacity of fear to trump the audacity of hope.

Shenghao Wang is an alumnus in the MIT Class of 2016.

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THEATER REVIEW

Brooding pirates, a damsel in distress, and Le Jardin Animé en pointe

A lavish production set in the Ottoman era



COURTESY OF BOSTON BALLET

Maria Baranova, Rachele Buriassi, and Ji Young Chae in Ivan Liška's *Le Corsaire*.

Le Corsaire

**October 27 through
November 6, 2016**

Boston Opera House

By Attila Forruchi

Le Corsaire (the Pirate) is a thrilling fantasy tale set in the Royal Ottoman era about a love triangle between a handsome corsair named Conrad, the ruthless Pasha Seyd, and the beautiful maiden Medora. It is a three-act ballet, originally choreographed by Henry Vernoy de Saint-Georges and Joseph Mazilier to the score of Adolphe Adam, and world premiered by the Théâtre Impérial de l'Opéra in Paris in 1856. However, contemporary performances of *Le Corsaire* are based on the legendary Ballet Grand Master Marius Petipa rendition for the Imperial Ballet of St. Petersburg in 1863. Boston Ballet's production is based on Ivan Liska's version, which premiered in 2007.

In the opening scene, Conrad and his fellow buccaneers are battling the storming

seas. Having survived the turbulent seas, Conrad and his fellow pirates arrive in the marketplace in Andrinople, where they mingle with the villagers and ogle the dancing slave girls up for sale. Medora, the beautiful adopted daughter of a wealthy slave trader Lankedem, is attracted to the charming Conrad and throws him a bouquet of flowers, which instantly enchants him to her beauty and grace. But of course, Lankedem would have none of this blossoming romance. As the Pasha is carried into the marketplace and glances around, he is also spellbound by Medora's beauty, and demands her from Lankedem with bribes and threats. The horrified Medora begs Conrad to take her with him and Conrad and his fellow pirates gallantly battle their way back to their ship with Medora and all the slave girls they could haul.

Principal dancer Lia Cirio (Gulnara) delivers a masterful performance as she tries to seduce the Pasha and earn his favor. Her demur legs seem to burst with muscularity when she is en pointe, and look fully stretched on every step. The dance of the slave girls, with their diminutive bodies adorned in belly dancing costumes was a feast for the eyes, and a sadomasochistic pleasure for the mind.

On the other hand, Roddy Doble (Lank-edem) with his gelled and perfectly coiffed hair looked more like a Red Sox Nation-fan on a date than a sleazy slave trader of Ottoman era. Fortunately, the hairdo faux pas was remedied in the subsequent acts by a red fez headdress. Sabi Vergas's portrayal of the Turkish Pasha was friendly and warm rather than a dunce slob as in Petipa's version.

The second act takes place in a grotto on an idyllic pirate island on the Levantine Coast, where Conrad and Medora are in passionate embrace before delicately dancing their pas de deux. The pas de deux performed by Lasha Khozashvili (Conrad) and Seo Hye Han (Medora) is one of the best-known duets in the classical ballet repertoire and is practiced and danced by prima ballerinas as evidence of their accomplishments. The romanticisms of Han's expressions and her ability to produce dynamic movements from her petite figure and the soaring grand jete of Khozashvili brought the loudest applause from the audience.

The final act and the highlight of the evening is bracketed by two of the most popular and lavish passages in the classical ballet repertoire. The demanding Pas de Trois des Odalisques is one of a rare surviving Pas

de Trois of Petipa and was danced masterfully by three premiere soloists, Baranove, Buriassi, and Chae.

Le Jardin Anime — a great divertissement staged by the Harem odalisques and Gulnara before Conrad elopes with Medora to his ship — is a gorgeous cornucopia of dozens and dozens of beautiful ballerinas in lacy pink and golden tutus dancing demurely and exquisitely en pointe to the lush score of Leo Delibes. It is a magnificent feast of beauty and elegance, and a rare opportunity to see two great performers side by side — Gulnara danced by Lia Cirio and Medora danced by Seo Hye Han. The two principal dancers styles complement each other well. Han exudes the softness, charm and grace of a classical ballerina while Cirio exhibits the power and technical prowess of contemporary dancer with an ability to hold her arabesque for a seemingly infinite amount of time.

If *The Nutcracker* is the only ballet you've heard of, or you find that *Swan Lake* was too melancholic, go see *Le Corsaire*. It is a classic tale of love, derring-do, and triumph, accompanied with a playful score and a happy ending that makes it perfect for entertaining the whole family or a wholesome date.

MOVIE REVIEW

Strange worlds with Doctor Strange

A modern day man with old fashioned magic powers

★★★★☆

Doctor Strange

Directed by: Scott Derrickson

Starring: Tilda Swinton, Benedict Cumberbatch, Chiwetel Ejiofor, Rachel McAdams

PG-13

Release Date: November 3, 2016

By Jessie Wang and Benjamin Oberlton

The Marvel Universe produces yet another Hollywood blockbuster. Unlike past works, this movie features a lesser known superhero; nevertheless, both hardcore Marvel fans and people just now hopping on the superhero bandwagon

will be able to enjoy *Doctor Strange*. Combining the humor that we love in *Iron Man*, the magic that grasps us in the Thor movies, and the special effects that makes Avengers so memorable, *Doctor Strange* will surely join the rest of the Avengers as a Marvel classic.

Doctor Strange focuses on the life of a young, cocky neurosurgeon Stephen Strange (Benedict Cumberbatch). With a massive intellect only matched by his ego, Strange leads the world in medicine, and makes sure that everyone knows it. However, when an accident takes everything from him, he embarks on a journey to find a way back to his former glory. Strange makes his way to South Asia in a desperate gamble to recover his status, but instead he is thrown into a cosmic fight for the future of humanity. He struggles to overcome his pride and his many regrets as he tries to grasp a world he never imagined could exist.

Since its early days, RealD 3D has progressed by leaps and bounds; Marvel Studios takes full advantage of the experience, with its explorations of alternate realities and mind-twisting visualizations of the cosmos. The fight scenes felt like a mashup of *Inception's* dreamscapes and old school martial arts sequences. A caveat to the pure awesomeness of the CGG however: in some of the motion heavy scenes, I was hit with mild bouts of car sickness. As my friend who watched this film

with me did not experience this, and I am particularly sensitive to motion sickness, this likely won't be problematic for most of the population. Still, those weak of stomach, beware.

As an actor, Cumberbatch has been rather pigeonholed to unsociable, genius characters since his first breakthrough as the titular character in BBC's *Sherlock*. Although on the surface, his role as Dr. Strange seems to fit this mold as well, Cumberbatch's performance manages to subvert the pattern elegantly. Stephen Strange is presented to us fully formed, with a personality both exasperating and abrasive, magnetic and likeable.

Although Strange's journey through various nations and dimensions keeps watchers glued to the screen, at points it is slightly unrealistic how easily he surmounts hardship. As Dr. Strange's introduction, this film does an excellent job of setting him up to join the rest of the Marvel cinematic universe. At two hours, the film gives ample time to character development, while still allowing for an engaging and intricate plot. The side characters fill their roles seamlessly, and I never wondered what a character was doing there. The villain actually made sense, comic relief characters were placed logically and were genuinely hilarious, and the women of the movie were faceted and influential; all in all, the cast was refreshingly human.



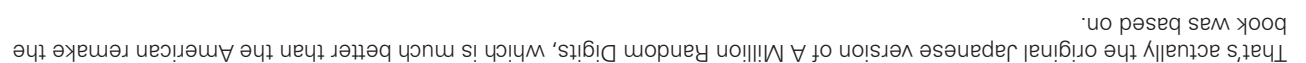
PHOTOGRAPHY BY VIVIAN HU

Spooky Skate

Skaters gathered in the Johnson Ice Rink 8 p.m. to midnight Friday, Oct. 28 to kick off Halloween weekend with the annual Spooky Skate festival. Students showed up in creative costumes; some attended in groups with coordinated outfits. Students did not let the seeping cold deter them from sticking to their bold costume choices at the event.







Decor for Today

by Gail Grabowski

Solution, page 13

ACROSS

- 1 Way of walking
- 5 Rental dwelling: Abbr.
- 8 Minor quarrels
- 13 Racetrack postings
- 14 Played a trumpet
- 15 Prohibited thing
- 16 __ apart (dismantled)
- 17 __ time (never)
- 18 Sports complex
- 19 Large coffee brewer
- 20 Author’s secret collaborator
- 22 Retail chain for cats, dogs, etc.
- 24 Bonnets and berets
- 25 Shine softly
- 27 Uses a shovel
- 28 Atlas page
- 31 Swordplay weapon
- 33 Barber’s expertise
- 35 Chicago airport
- 37 Discuss a possible solution
- 40 Pickling solution
- 41 Midterm or final

- 42 Pull apart, as paper
- 43 Complete collection
- 44 Trampled (on)
- 46 Papa’s partner
- 48 Military no-show, for short
- 49 Southwestern tablelands
- 52 All-purpose door unlocker
- 58 Pool stick
- 59 Spooky
- 60 Top-rated
- 61 List with soups and salads
- 62 Pass, as legislation
- 63 __-do-well (scamp)
- 64 Picnic pests
- 65 Carrots, on snowmen
- 66 U-turn from NNW
- 67 Loch __ monster

DOWN

- 1 Rolled out of bed
- 2 Really like
- 3 “Explain that again”
- 4 Scolding sound
- 5 Female choir voice
- 6 Writing utensils

- 7 About 66 percent
- 8 Begins, as a project
- 9 France’s capital
- 10 Help with, as a crime
- 11 Voice-mail signal
- 12 Fly like an eagle
- 14 Scrooge’s exclamation
- 20 Sticky stuff
- 21 Dog’s tail movement
- 23 Spotless
- 26 “Halt, __ goes there?”
- 27 Ate a formal meal
- 28 Ranted and raved
- 29 Region
- 30 Bosc or Bartlett
- 31 Recedes
- 32 Remove the rind from
- 34 Bank offerings for car buyers
- 36 Blackjack player’s request
- 38 Forwards a Twitter posting
- 39 24-hr. bank device
- 45 Go bad
- 47 Novelist __ Tan
- 48 Girl in Wonderland

1	2	3	4		5	6	7		8	9	10	11	12
13					14				15				
16					17				18				
19				20					21				
22			23				24						
		25			26		27				28	29	30
31	32				33	34			35	36			
37				38					39				
40						41				42			
43				44	45				46	47			
			48						49			50	51
52	53	54					55	56	57			58	
59						60				61			
62						63				64			
65						66				67			

- 50 Uncles’ spouses
- 51 “Dr.” of children’s books
- 52 Noticed
- 53 Gambling game like lotto
- 54 Memorable times
- 55 Negative responses
- 56 Midleg joint
- 57 Suffix for mountain or auction
- 61 Guy

Wind

Solution, page 14

8		1		6				3
		4		2				
	2		4					9
		5	8	1			9	
7		8				4		2
	1			7	2	8		
1					5		6	
				9		1		
6				4		3		8

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

Rain

Solution, page 14

96x				19+				26+	
30+				7			252x		
	9			16+				8+	
42x					72x				30x
4-					56x		1-	6x	
25+					20+				4
2			378x				25+		
24x				8x		18+			
12+				8				63x	

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–9. Follow the mathematical operations for each box.

Have a Good Day

by Billie Truitt

Solution, page 13

ACROSS

- 1 Minor argument
- 5 Need to scratch
- 9 G sharp equivalent
- 14 Rainbow shapes
- 15 Sports squad
- 16 Nary a soul
- 17 Good __ (magical trinket)
- 19 Mark on an exam
- 20 Hill-building insect
- 21 Employ
- 22 Burger King rival
- 23 Fate
- 25 All by oneself
- 26 Pen fluid
- 27 Last Supper attendees
- 31 Letter after rho
- 34 Snow glider
- 35 Conceal
- 36 Toledo’s lake
- 37 Store events
- 38 “. . . or __ just me?”
- 39 Opposite of fem.
- 40 Matured
- 41 Pesky little fliers

- 42 Blocking progress
- 44 Droop
- 45 Log splitters’ tools
- 46 Person used as a dupe
- 50 Capital of Spain
- 53 Circle of light
- 54 Friend from France
- 55 In any way
- 56 Good __ (helpful stranger)
- 58 “That’s the truth!”
- 59 Place to dock
- 60 Odds and ends: Abbr.
- 61 Was a secret agent
- 62 Wartime partner
- 63 Model’s stance

DOWN

- 1 Bowl of greens
- 2 Dried plum
- 3 Bank records: Abbr.
- 4 Disapproving sound
- 5 “It seems to me . . .”
- 6 Weepy-eyed
- 7 Show concern
- 8 “Let me see . . .”

- 9 Heavenly beings
- 10 Good-__ (useless ones)
- 11 Washerful of laundry
- 12 Raggedy doll
- 13 Golfer’s pegs
- 18 Great Wall country
- 22 Carpenter’s materials
- 24 Good-__ (fun-loving guy)
- 25 Drive too fast
- 27 Place to bowl
- 28 “Mona __”
- 29 Fix, as a manuscript
- 30 Solidifies
- 31 Prefix for final
- 32 Teheran’s land
- 33 Main point
- 34 Epic tales
- 37 Made logs into boards
- 41 Croc cousin
- 43 Banished
- 44 Weekly pay
- 46 Caravan beast
- 47 Backyard cookout area
- 48 Gather together
- 49 Flinch

1	2	3	4		5	6	7	8		9	10	11	12	13
14					15					16				
17					18					19				
20				21				22						
23			24				25							
			26				27					28	29	30
31	32	33				34				35				
36					37					38				
39					40					41				
42				43				44						
			45				46					47	48	49
50	51	52					53					54		
55						56				57				
58						59				60				
61						62				63				

- 50 __ best friend (a dog)
- 51 On the peak of
- 52 Painter Salvador
- 53 Flag down, as a cab
- 56 Hot-spring resort
- 57 Little troublemaker



A) YOU SHOULD READ AT LEAST 3 PAPERS A WEEK.

B) YOU SHOULD READ AT LEAST 3 PAPERS A DAY.

C) STOP READING PAPERS. YOU SHOULD BE WRITING.

JOERGE CHAM & SIGRID T © 2016

Solution, page 14

23+			12x		45x		14x	6x
2-	4+		37+			8x		
		63x			18x		160x	
120x						2		7
3		25+			22+			3-
1-		7			19+			
42x		120x		2			108x	
45x			1-		2	7		
6		2-		21x			72x	

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–9. Follow the mathematical operations for each box.

Committee might add new 6-1 courses

Discussions are underway with faculty and student focus groups

Survey, from Page 1

our goal is not to change the template,” Chandrakasan said.

The committee is currently evaluating many proposals for new classes and is discussing them weekly with EE faculty. The committee is “also getting valuable input from the USAGE group,” Chandrakasan said, in addition to having focus-group discussions with students run by an external consulting group.

The department want to “make sure the classes we offer reflect how broad EE is,” Chandrakasan said. Potential new offerings might incor-

porate online learning, or be based around student projects.

The department has piloted experimental courses in the past. This semester, one experimental offering is Circuits and Electronics, 6.S064. The content of the course is the same as the traditional offering of 6.002, but students learn the content online through the edX platform, according to the course website. The course professor and TA are available to answer questions on campus, but the entirety of the course is taken online.

“We very much value student input as we make changes,” Chandrakasan concluded.

The site has received over one million visitors since launch

Project is part of a larger goal to break down the barriers impeding human-machine cooperation

AI, from Page 1

cooperation. Psychological perceptions of what makes humans tick and what make machines tick are important barriers for such cooperation to emerge. This project tries to shed some light on that front, of course in a goofy hackerish Halloween manner!

TT: What has the reaction been and how much participation have you seen?

Manuel: So far, we have collected over 800,000 individual evaluations of our fully computer-generated images and we exceeded one million visitors just in one week! We’ve also gotten encouraging feedback through social media channels. Here are our personal favorites, for how insightful they are:

—drstefdirusso from Twitter: “Just checked out @nightmare_mit. What scares me more than the images is that a computer knows no boundaries as to what

is too grotesque...”

—dia80, from hackernews: “Deep torture, anyone? Gradient descent on stimuli to get what you want out of adversaries. Kind of scary.”

—Andrew McAfee from Twitter: “Nightmare Machine” is cool, but how hard was it to make the 2016 debate look terrifying?”

—LPSandroni from Twitter: “teaching a machine how to be terrifying...just let them live they will discover by themselves.”

MIT encourages students to “hack” the library

A report published last Monday by MIT’s Task Force on the Future of Libraries encouraged members of the MIT community to “hack the library” in an effort to reinvent the modern research library.

This long-term “hack” is to create a library of the future: one that is “interactive, responsive, and collaborative,” according to the report.

The committee responsible for the report urged the MIT community to generate ideas to reinvent the library in addition to proposing a few “hacks” of its own.

The proposed changes would impact four aspects of MIT libraries: improved relation-

ships between the library and the community, more open dissemination of knowledge, better management MIT’s scholarly resources, and further research and development of a “library of the future.”

To improve relationships between the library and community, the report suggested MIT libraries serve a broader audience. Resources should be available, beyond MIT students and faculty, to cooperating scholars, alumni, students of MITx, all Cantabrigians and Bostonians, and scholars across the world. In addition, the report recommends the creation of a group to redesign the library physically to help further these goals.

To be of greater service to the world, the report recommended that libraries digitize analog collections and acquire more digital content to facilitate dissemination of MIT research.

To manage MIT’s scholarly resources and legacy, the report encouraged archiving analog content and managing and preserving digital research.

Finally, the report recommended the establishment of an initiative to conduct experiments and research what the challenges are in information science and scholarly communication.

More suggestions on developing the future of libraries can be sent to future-lib@mit.edu.

—Anshula Gandhi



ANSELMO CASSIANO—THE TECH

Shivangi Goel '17, founder of SALSAB: Save a Life Save a Heart, explains CPR during the workshop How 10 Minutes Can Save a Life in the Student Center on Oct. 28. The public was invited to learn more about how to identify a stroke and take part in CPR training. The event was part of MIT Cardiac Health and Stroke Awareness Month and was supported by the Priscilla King Gray Public Service Center, MIT-EMS, and the UA.

Solution to Decor

from page 11

G	A	I	T	A	P	T	S	P	A	T	S
O	D	D	S	B	L	E	W	T	A	B	O
T	O	O	K	A	T	N	O	A	R	E	N
U	R	N	G	H	O	S	T	W	R	I	T
P	E	T	C	O	H	A	T	S			
	G	L	O	W	D	I	G	S	M	A	P
E	P	E	E	H	A	I	R	O	H	A	R
B	A	T	A	R	O	U	N	D	A	N	I
B	R	I	N	E	T	E	S	T	E	A	R
S	E	T	T	R	O	D	M	A	M	A	
	A	W	O	L			M	E	S	A	S
S	K	E	L	E	T	O	N	K	E	Y	C
E	E	R	I	E	A	O	N	E	M	E	N
E	N	A	C	T	N	E	E	R	A	N	T
N	O	S	E	S	S	S	E		N	E	S

Solution to Have

from page 11

S	P	A	T	I	T	C	H	A	F	L	A	T
A	R	C	S	T	E	A	M	N	O	O	N	E
L	U	C	K	C	H	A	R	M	G	R	A	D
A	N	T	H	I	R	E	W	E	N	D	Y	S
D	E	S	T	I	N	Y	S	O	L	O		
	I	N	K	A	P	O	S	T	L	E	S	
S	I	G	M	A	S	L	E	D	H	I	D	E
E	R	I	E	S	A	L	E	S	I	S	I	T
M	A	S	C	A	G	E	D	G	N	A	T	S
I	N	T	H	E	W	A	Y	S	A	G		
	A	X	E	S	C	A	T	S	P	A	W	
M	A	D	R	I	D	H	A	L	O	A	M	I
A	T	A	L	L	S	A	M	A	R	I	T	A
N	O	L	I	E	P	I	E	R	M	I	S	C
S	P	I	E	D	A	L	L	Y	P	O	S	E

A sampling of people you’ll meet during a typical dinner at *The Tech*:

- Lenny, Course 2

Michelle, Course 3

Jiahao, Course 6

Patricia, Course 8

Vivian, Course 9

Amy, Course 10

Vince, Course 12

Fiona, Course 14
- Samir, Course 16

Katherine, Course 17

Claire, Course 18

Jack, Course 19

Tara, Course 20

Mirny, Course 21

Karleigh, CMS

Alex, Course 22

We’re everywhere!



join@tech.mit.edu
W20-483, 617-253-1541

Welcome, Dean Nelson!

The MIT community is invited to an afternoon of autumn appetizers, desserts, and beverages as we welcome Suzy Nelson, Vice President and Dean for Student Life, to MIT.

Monday, Nov. 14, 2016
3:00 p.m. – 5:00 p.m.
Vest Student Street
Stata Center (Bldg. 32)



Massachusetts
Institute of
Technology

WEATHER

Showers precede weekend cool-down

By Vince Agard
STAFF METEOROLOGIST

The Institute's relatively rainy autumn continues today, as a low pressure system will develop and pass from west to east over southern New England. This storm will likely bring light to moderate rain showers to the Boston area throughout this afternoon and evening. Depending on its exact track, the frontal system could also bring another spike in temperatures: Areas to the south of the center of the low will see temperatures in the upper 60s, while those to the north will remain in the 50s (°F). If the storm does pass to the north, a warmer afternoon with significantly less rain is possible.

This afternoon's storm sys-

tem could bring up to a half-inch of rainfall, continuing a relatively rainy trend that began around a month ago. The weather monitoring station atop the Green Building has measured 7.30 inches of rain since September 30th, compared to just 6.56 inches in the four months prior. The fall and winter months generally feature more precipitation than those in the summer, so more rainy weather will be needed to alleviate the current drought in Massachusetts.

After tomorrow's storm moves out to sea, the sun will return for the weekend. However, temperatures will be kept a few degrees below normal by a brisk northerly wind on Friday, and by the presence of an upper-level trough on Saturday and Sunday.

Extended Forecast

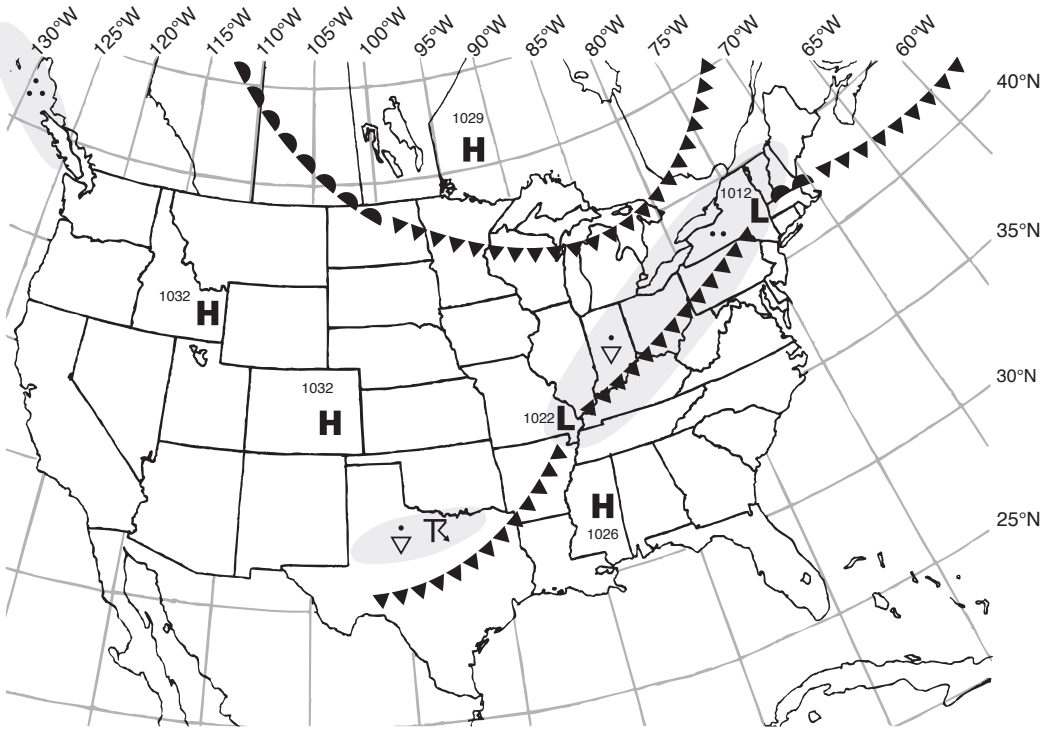
Today: Mostly cloudy with afternoon rain, high 65°F (18°C). Winds light and variable.

Tonight: Becoming breezy as rain tapers off. Low 46°F (8°C), with winds 10-15 mph from the N.

Tomorrow: Partly cloudy with a slight chance of showers, high 53°F (12°C). Winds N at 15-20 mph.

Saturday: Mostly sunny, highs around 50°F (10°C).

Sunday: Partly cloudy, highs in the low 50s °F (11°C).



Situation for Noon Eastern Time, Thursday, November 3, 2016

Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols
H High Pressure	Trough	Snow	Fog
L Low Pressure	Warm Front	Rain	Thunderstorm
Hurricane	Cold Front	Light	Haze
	Stationary Front	Moderate	
		Heavy	

Compiled by MIT Meteorology Staff and The Tech

Israeli Dance Beginner's Classes!

Wed Nov 9: Stud Ctr 491

Wed Nov 16: Lobdell Dining Hall

7:30 - 8:30 pm

followed by open dancing

Free for all students.

Suggested donation \$1 from the public.
<http://mit.edu/fdc>

Solution to Wind

from page 11

8	7	1	5	6	9	2	4	3
9	6	4	7	2	3	5	8	1
5	2	3	4	8	1	6	7	9
2	3	5	8	1	4	7	9	6
7	9	8	3	5	6	4	1	2
4	1	6	9	7	2	8	3	5
1	8	7	2	3	5	9	6	4
3	4	2	6	9	8	1	5	7
6	5	9	1	4	7	3	2	8

Solution to Rain

from page 11

8	4	3	6	9	1	2	5	7
9	5	4	7	1	2	3	6	8
4	9	8	2	5	6	7	1	3
7	3	2	5	8	9	1	4	6
6	2	1	4	7	8	9	3	5
5	1	9	3	6	7	8	2	4
2	7	6	9	3	4	5	8	1
3	8	7	1	4	5	6	9	2
1	6	5	8	2	3	4	7	9

Solution to Snow

from page 12

8	7	6	4	3	9	5	2	1
4	3	2	9	8	5	1	7	6
2	1	9	7	6	3	8	5	4
5	4	3	1	9	6	2	8	7
3	2	1	8	7	4	9	6	5
9	8	7	5	4	1	6	3	2
7	6	5	3	2	8	4	1	9
1	9	8	6	5	2	7	4	3
6	5	4	2	1	7	3	9	8



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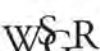
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November 6 @ 4 PM

LA SALA (W20-202)



Ballot selfies are in a legal gray area in eighteen U.S. states

Justin Timberlake published a ballot selfie in TN, which was a misdemeanor under state laws

By Katie Rogers
NEW YORK TIMES

If you are hoping to document your vote by taking a photo of your ballot, you may be headed for a legal gray area that in some states has grown only murkier in the days leading up to Election Day.

Because the laws in several states are muddled, under review or confusing, unsuspecting voters may run afoul of the rules.

Last week, an extensive review by The Associated Press of the array of ballot selfie laws in all 50 states found that 18 states prohibit sharing photos of ballots. Another, California, joined the list on Wednesday, when a federal court judge denied a request to allow them.

With only a week until the general election, on Nov. 8, battles are being waged over the legality of so-called ballot selfies in at least three states, including Colorado, Michigan and New York.

The AP found that voting laws were unclear in a dozen states. California was a good example of how confusing the rules could seem to voters: A 125-year-old law barring people from sharing their ballots has been repealed, but the legislative action allowing ballot selfies will not go into effect until weeks after the election.

That created a sort of legal limbo for voters: Can they violate a ban that is not being enforced in the first place? Wednesday's ruling offered some clarity, but residents of other states may still be confused.

In some cases, lawmakers find, antiquated laws collide with the modern tendency to document the goings-on of daily life, which, every once in a while, involves casting a vote.

In Colorado, a federal judge will soon hear challenges to a 125-year-old law that bars people from publishing their ballots, similar to the one in California. In Colorado and New York, publishing a ballot remains a misdemeanor crime.

According to The Denver Post, the case for keeping the law protects against possible cases of voter coercion.

"We believe the current law protects the integrity of the election and protects voters from intimidation or inducement," Suzanne Staiert, Colorado's deputy secretary of state, said in a statement to the newspaper. "In fact, given Colorado's unique election system and rise of social networking, the prohibition may be more important in Colorado than in other states and may be more timely today than ever."

This argument was used unsuccessfully by officials in New Hampshire, which overturned a ban on ballot selfies in September. The media company Snapchat was involved in that case and filed an amicus brief that argued ballot selfies

were "the latest way that voters, especially young voters, engage with the political process."

Activists also found the voter-coercion argument moot: "There isn't much evidence, if any at all, that this kind of activity is actually occurring," Justin Silverman, the executive director of the New England First Amendment Coalition, told The New York Times in April.

Because of the muddled laws in several states, some voters are still at risk of breaking the rules. In one high-profile case, the musician Justin Timberlake published a ballot selfie after voting in Tennessee, apparently unaware that doing so constitutes a misdemeanor crime there, punishable by fines and jail time.

Timberlake, however, is not being investigated for his legal slip-up, according to USA Today.

In other states, lawmakers seem willing to keep the debate over ballot selfies running down to the wire: In Michigan, an appeals court reversed a lower court's ruling to allow ballot selfies, leaving voters with just over a week to figure out whether the act was legal in their state.

And in New York, three voters filed a lawsuit in October against the ban in a district court. According to The AP, the judge, P. Kevin Castel, asked why the plaintiffs waited until just before the election to challenge the law.

"I don't blame him," said Leo Glickman, the lawyer who filed the lawsuit on behalf of the voters. "We are asking a lot of the courts to do something in a short period of time."

Castel is expected to rule on the ban by the end of the week.

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Hayden Library, 14S-100



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Congratulations Margaret Guo!
You have made us all proud.